**Final** Meeting Notes: Community Advisory Group (CAG) –
Aerojet General Corporation Superfund Site Issues
Meeting Date: January 21, 2015

## 1. Introductions and Attendees

Janis Heple, CAG Chair, began the meeting with introductions at 7:00 p.m.

Attendees:

Burt Hodges (Save the American River Association [SARA])
Brit Snipes (City of Rancho Cordova
Chris Fennessy (Aerojet Rocketdyne [Aerojet])
Jackie Lane (U.S. Environmental Protection Agency [EPA])
Janis Heple (CAG Chair)
Jessica Cooper (Recorder, Sullivan International Group, Inc.)
Jimmy Spearow (CAG)
Alexander MacDonald (Regional Water Quality Control Board)
Julie Santiago (EPA)
Jerald Drobesh (Community Member)
Kathy Lawson (Golden State Water)
Kevin Mayer (EPA)
Larry Ladd (CAG)
Rick Bettis (Sierra Club and others)
Stephan Green (SARA)
Steven Ross (Department of Toxic Substances Control [DTSC])
Tessa McRae (Sullivan International Group, Inc.)

The Draft Meeting Notes from the meeting on November 19, 2014 were finalized, pending clarification from Mr. Fennessy regarding a comment from Mr. Spearow, and review by Ms. Santiago.

## 2. Aerojet Community Update – Chris Fennessy, Aerojet

Mr. Fennessy discussed the City of Folsom's "Notice of Public Review and Notice of Intent to Adopt a Mitigated Negative Declaration" on the South of Highway 50 Backbone Infrastructure Project. He explained the proposed project consists of the construction of the backbone infrastructure within the Folsom Plan Area, south of Highway 50 in the City of Folsom, CA. The Folsom Plan Area is bounded by Prairie City Road on the west, Highway 50 on the north, White Rock Road on the south, and the Sacramento County/El Dorado County boundary on the east. He said the expansion includes infrastructure improvements and connections, such as for storm drainage, water, and sewer infrastructure.

He said he believed the County of Sacramento annexed the area to the City of Folsom, and now the city has the ability to expand the community. He said they are working with a developer and mixed use is planned. He explained the City of Folsom completed an Environmental Impact Report (EIR) about 4-years ago, which was approved and adopted. He said there are now changes to the land use plan, such as changes from single family residential use to multi-use in some areas. He explained that these changes resulted in minor modifications to the backbone infrastructure plan, such as sizes of utilities. These changes are what caused the City's submittal of the Notice of Intent to Adopt a Mitigated Negative

Declaration notice. He explained there was not a lot of pre-notice; Aerojet was not aware and would have given the community notice.

Ms. Santiago indicated that EPA received the notice 20-days after the document was issued, and forwarded to Ms. Heple.

Ms. Heple indicated the public comment period ended yesterday, on January 20, 2015.

Ms. Heple said she reviewed a letter prepared by Mr. MacDonald regarding acknowledging that a portion of the area is on Area 40, which is undergoing investigation and remediation, and potential consequences of the proposed infrastructure plan changes. Ms. Heple stated she agreed and was in support of Mr. MacDonald's comments; after discussion with several CAG members, a letter stating similar concerns and in support of Mr. MacDonald's comments was submitted to the City of Folsom by the final filing date on behalf of the CAG.

Mr. MacDonald mentioned one of his goals was to remind the city that this is a hazardous waste site, and to notify them of the restrictions and especially that Land Use Controls have not been established. He said the agencies and Aerojet do not know the entire plan yet.

Ms. Santiago mentioned the draft EIR comments for an area east of Area 40, Russell Ranch, was due in February 2015. She said the broader community is working on issues.

Ms. Santiago said she tried to reach someone with the City of Folsom before the holidays. She said rather than comment on the public notice, EPA would like to talk to the City of Folsom to explain the situation and ensure they understand the implications of these changes to the plans in the existing EIR. She said the EPA attorney's agreed with this approach.

Ms. Heple said she was glad to hear that the EPA and Aerojet will be interfacing with the City of Folsom.

Mr. Hodges said he does not think there should be a negative declaration, and Ms. Heple commented that a retired planner noted that these impacts could be considered to be significant

Mr. MacDonald explained the EIR is already approved, and there are now changes in the pipeline sizes, etc. He said the agencies have already gone through all the issues, except the minor issues with these changes that need to be addressed. Mr. MacDonald said all the potential impacts to ecological habitat, surface waters, storm water, and wastewater have been reviewed and addressed.

Mr. Fennessy announced Mr. Tim Murphy has resigned from Aerojet and his last day is sometime in February 2015. Mr. Fennessy will continue attending the CAG meetings representing Aerojet.

Question: Was the installation of a monitoring well on Trinity Drive discussed during the last CAG meeting? Mr. MacDonald said not yet, and the installation was delayed until after the holidays.

## 3. Aerojet Cleanup Updates – Julie Santiago, EPA and Kevin Mayer, EPA

Note: A schedule and maps were distributed (not included with final meeting notes).

Mr. Mayer said the physical pieces of the groundwater cleanup are almost in place, such as the treatment systems, pipelines, monitoring wells, etc. He said another important factor is the ongoing collection of data for modelling the effectiveness of the groundwater remedy – we will need to analyze how well all of the pieces of the system working together. He said we will most certainly be adding more monitoring wells.

Question: Does the plume extend beyond where the map shows the boundary, and are there other monitoring wells beyond this boundary? Mr. Mayer said there are many monitoring wells outside the plume boundary. This map shows the approximate extent of the contaminated groundwater, and we do have more recent data that would refine the boundary. Ms. McRae said the map is based on data from 2008 to 2011. Mr. Mayer said an update showing concentration contours and well locations on the map would take a lot of effort. He explained there are over 2,500 monitoring points across 20 square miles, and there are different levels of contamination that would need to be depicted in different map layers to come up with the "composite" layer. He said the contour on the EPA map includes the extent of the plume in general regardless of which depth or contaminant.

Question: Does the plume extend into the Old Town section of Fair Oaks? Mr. MacDonald responded in the negative, and there are trace levels of contamination in that location and not in the Old Town area. He explained there is a monitoring well to the east, ensuring the area is clean. Mr. MacDonald explained he has all the latest plume maps that he is happy to share with the community.

Ms. Santiago said the Record of Decision (ROD) for Boundary Operable Unit (OU-6) is undergoing a second round of reviews through the EPA. She said comments have been provided by the State Water Board, DTSC, and EPA Headquarters. Ms. Santiago explained the public comment period was held from May 2013 to September 2013, and the review process has gone through two iterations. She said the second iteration triggered a back and forth regarding the Institutional Controls (ICs) for groundwater. She said there were some discrepancies in language between other documents, and what that means site-wide. She said EPA met with their attorneys to discuss updating the ICs language to clarify that ICs for groundwater will include groundwater underneath the entire site. She explained there were differences in the ICs language for Western Groundwater Operable Unit (OU-3) and Perimeter Groundwater Operable Unit (OU-5), and the Boundary Operable Unit (OU-6) will need additional language to clarify the restrictions for full protectiveness. Mr. Mayer further explained EPA did not want to limit the scope of OU-3 and OU-5 groundwater work, so EPA decided to clarify this for OU-6. Ms. Santiago said this clarification will be included in every future ROD.

Ms. Santiago said additionally, EPA is addressing all agency comments, and will discuss the Applicable or Relevant and Appropriate Requirements (ARARs) with DTSC and the

State Water Board prior to requesting the ROD letter of concurrence from the State of California.

**4. Island Operable Unit (OU-7) Remedial Investigation, Line 1 – Chris Fennessy, Aerojet**

Note: Maps were presented (see attachments with final meeting notes).

Mr. Fennessy discussed Line 1 within the Island Operable Unit (OU-7). He provided an overview of the history of Island Operable Unit (OU-7). He explained the lotion, physical features, and history of Line 1. He said trichloroethylene (TCE) and perchlorate are the primary contaminants, which have impacted soil and groundwater in a variety of different locations across the entire site.

Mr. Fennessy said Line 1 is broken-up into a central area, northern area, and southern area on the maps. He explained the historical data from all source areas were compiled and evaluated to determine if any source areas not in the IOU should be transferred to the IOU. He said from that evaluation, 6 or 7 sites were added, and there are now 73 source areas identified in Island Operable Unit (OU-7). He said Aerojet started in 2005 with a Sampling and Analysis Plan to investigate OU-7 – all historical data was used, and helped defined where future sampling may be needed to address the entire area. He said aerial photographs from 1951 to 2006 were reviewed for any evidence of activities, such as ground scarring that could indicate a potential release of contaminants to the environment, outside of the pre-defined source areas and those areas identified were categorized and "open space areas".

Mr. Mayer asked if Mr. Fennessy could please bring an example of an aerial photograph with evidence of those activities in question.

Mr. Fennessy noted Line 2 was actually the first operating area. It was originally the Administration Area. He said the Administration Area was converted to Line 2 after Line 1 had been established. He explained there is no unauthorized access to Line 1, and Aerojet employees are protected.

Based on a question from a previous CAG meeting, Mr. Fennessy said operations did not include work for the Polaris rocket – instead, operations included work for others such as the Genie, Hawk, Minute Man, and others.

Mr. Fennessy explained the primary solvent used was TCE, and other contaminants include Freon-113, perchlorate, some metals, some explosives, and semi-volatile organic compounds. He shared maps showing the extent of TCE and perchlorate in soil, groundwater, and soil vapor across all three areas of the Line 1 site – including the central, northern, and southern areas. He noted there are thousands of data points that were not possible to add to the maps, so different symbols were used to characterize the locations, depths, and concentrations detected.

Mr. Fennessy explained the historical operations at Line 1. He said some operations occurred in buildings, and waste water was routed from buildings through trenches and drains to centralized areas, which were both lined and un-lined ponds depending on the type of manufacturing conducted. Mr. Fennessy mentioned the buildings were constructed like military facilities – with think, 2-feet wide concrete walls and floors. He said the buildings were all examined for cracks as potential conduits for contaminant releases. He said cracks were found in trenches, and chemical releases were discovered, particularly in areas of no or little vegetation.

Mr. Mayer mentioned that these "line areas" are larger than most Superfund sites across the nation. Ms. Santiago said that this point illustrates how complicated it is to complete Superfund documents, such as Proposed Plans and RODs, for Aerojet sites in general.

Mr. Fennessy further discussed the assessment of risk at Line 1. He said the Protection of Groundwater Screening Levels (PGWSLs) are used now, along with the usual screening levels that are based on human health risk and ecological risk.

Question: What are the contaminants, all volatile organic compounds (VOCs)? Mr. Fennessy said the documents list all of the contaminants, and many were not depicted on these maps because it was not feasible to include that much data.

Mr. Fennessy discussed the perchlorate data, and it appears in some areas contamination is not fully delineated or bound laterally. He explained almost all of the Aerojet property was dredged for gold mining and re-shaped the landscape, and as a result there are 40-foot cobble piles that cause complicated topography; therefore, this causes difficulty to sample and investigate a site.

Question: How has Aerojet dealt with investigating with the complicated topography? Mr. Fennessy said after the identification of problem areas or sources, step-out sampling or confirmation sampling was conducted outside the complicated areas to help define the extent.

Mr. Fennessy explained in 2004, the original approach was aggressive; however, due to changes in screening levels since the investigation, chemicals are not always delineated to the current screening levels. He explained as risk assessments are prepared and reviewed by the Agencies, additional data may need to be collected to evaluate the extent of chemicals down to current screening levels. Mr. Mayer said a prime example of this includes the "surprises" at Area C4, where over-excavation was needed multiple times.

Mr. Fennessy further explained prior to investigating the source areas, we try to identify what occurred as much as possible in order to characterize a site, such as employee interviews (past and present if available), analyze historical aerial photographs, and estimate the fate and transport of chemicals from a particular source. The goal of the investigation is to determine where the sources are located and a rough order of magnitude of the source area. Data gaps are filled in later once remedy is determined.

Mr. Fennessy explained most buildings drained water to the "slikens" areas, the elongated areas between the cobble piles created during dredging activities. He explained that Aerojet is backed-up against the foothills of the Sierra Nevada's, and before the American River was channeled, the river meandered and geologic material became fanned-out. He said as the American River meandered, it washed away sediments and moved the material, which created a "layer cake" effect with different levels of material due to this gradual movement. He said multiple aquifers were formed, and these layers dip away from the foothills. He said this is why the different water bearing zones (and as a result, the contamination) appears to overlap. Mr. Fennessy stated there are documents and data available for review, and he would be happy to have working meetings on these subjects.

Question: What is the deepest layer, and how deep is it? Mr. Fennessy said Layer F is the deepest layer chemicals have been detected, approximately 500 feet bgs, and there are extraction wells that deep as well.

Question: What chemicals are present at that depth? Mr. Fennessy said that TCE and perchlorate have both been identified that deep.

Mr. Mayer explained that sometimes contaminants can migrate through different layers, and often moves laterally and then "stair-steps down" even though we like to think of them as flat layers. Mr. Mayer said there is a lot of literature about the Aerojet site available to the public, including the geology, on the EPA website.

**5. Regional Board Aerojet Cleanup Overview – Alex MacDonald, RWQCB**

Note: The presentation notes and activities map were distributed (see attachments with final meeting notes).

Mr. MacDonald described the new monitoring wells installed, including a well installed on Queenston Court.

He explained the red dashed lined on the supplied figure symbolized the approximate extent of contamination in any layer as a whole. He said this includes all the different chemicals contributing to the contamination.

He said the installation of a new pipeline is in progress to connect two new extraction wells to the Groundwater Extraction and Treatment (GET) AB facility. He said new monitoring wells help evaluate the capture zones of the extraction wells. He mentioned there was a new extraction well installed near the Hogout site. He said two new monitoring wells identified as "sentinel" wells were installed between the source and drinking water wells. He discussed progress in the western portion of the site, including on Trinity Drive between GET J and GET KA, where a new monitoring well will be completed soon. He said the well will be a "three completion" well, meaning that there will be pipes going down to three different depths – to characterize three different layers. He explained the different layers and layers in between have different soil types and

characteristics, and the wells are screened where the groundwater flows in each particular zone or layer.

Mr. MacDonald mentioned the GET systems were named in alphabetical order, but noted there is no GET I.

Question: N-Nitrosodimethylamine (NDMA) was detected in Layer C at one point, correct? Mr. MacDonald explained that in the past NDMA contamination occurred in Buffalo Creek, which emptied into ponds along Sunrise Boulevard, before discharging to the American River. It is not clear how the NDMA in the ponds migrated down to Layer C so close to the ponds.

Mr. MacDonald discussed progress in the eastern portion of the site. He said the GET AB expansion has been completed, but wells had been previously shut down because the system could not handle that capacity; therefore, it's not running at full capacity yet. Additional wells are being brought back on-line. He described that at GET E/F, ion exchange units and air strippers were added.

He said Aerojet is preparing the Remedial Investigation report for Eastern Operable Unit (OU-8) and Central Operable Unit (OU-9), and completed the Sampling and Analysis Plan for the Remedial Investigation for the Cavitt Ranch Operable Unit (OU-4).

He discussed the removal of the Aerojet Landfill; Aerojet, the County of Sacramento, and Cal Recycle, DTSC and the Water Board are in ion discussions regarding the timing of the removal with respect to development of the nearby property.

Question: Is there soil contamination in Sunriver, or other communities in the Area? Mr. MacDonald explained that this is not an issue. He explained there is contamination in the groundwater, but this is not an issue unless it is pumped up; the community does not have exposure to the contamination.

Question: What is a GET? Mr. Fennessy explained that it is a groundwater extraction and treatment system that pumps up groundwater, treats it through the system, and then discharges the treated water. Discharges from Aerojet facilities goes directly to a surface water body, where it mixes with American River water prior to a water purveyor extracting the river water for treatment. In some instances, the water in water purveyors' extraction wells contain chemicals emanating from the Superfund Site. This water is treated at the well head by the water purveyor and then put into the distribution system. This water is required to meet drinking water standards prior to being put into the distribution system. He said drinking water wells are monitored, and if contaminated, it would be shut down immediately and alternate source of drinking water would be found. He said the water companies track all this information.

Question: Is it possible to get this data? Ms. Lawson said she will share her contact information, and direct the community to this information.

Question: Has there been any more discussion on separating Area 40 from the Island Operable Unit (OU-7)? Ms. Santiago explained that the EPA is not going to separate out Area 40 right now. She explained that the EPA's highest priority is the Island Operable Unit (OU-7). Mr. Mayer said EPA will keep the community apprised of the situation.

Question: How long will the CAG meet? Ms. Heple said the CAG has met for 14-years and counting.

Question: If air sparging is used to treat TCE, is there a risk of TCE getting into the air? Mr. Fennessy said the vapors are captured with the systems and treated to remove the VOCs prior to releasing the cleaned air to the environment. Mr. Mayer said there are ARARs for air too.

Question: How far has the Mather Air Force Base plume extended under the runway? Ms. Heple requested that we table further discussions to the next meeting.

## 6. 2014 Meeting Dates

The next CAG meeting is scheduled for Wednesday, March 18, 2015 in the American River South Room.

The subsequent meeting is tentatively scheduled for Wednesday, May 20, 2015 in the American River South Room.